Claim 21. (Amended) A program product comprising:

(A) a computer program including a object reference server mechanism for bootstrapping a remote second apparatus, said object reference server mechanism delivering an object reference for a naming context object to [a] said remote apparatus upon request of said apparatus; and

(B) signal bearing media bearing said object reference server mechanism.

Claim 28. (Amended) A program product comprising:

(A) a applet, said applet including an object reference uniform resource locator for retrieving an object reference for a naming context object from a server apparatus; and

(B) signal bearing media bearing said applet.

Remarks

In the office action, the Examiner object to the Drawings because the reference characters 200 and 220 have both been used to designate the client system in FIG. 3 and FIG. 4. Accordingly, applicants have enclosed a new FIG. 4 that provides the correct reference number 200 for the client system, along with an appropriate letter to the draftsperson. Applicants submit that this rejection has thus been overcome.

In the office action, the Examiner object to the disclosure for various informalities. Applicants submit that the above amendments removing "IBM" from "IBM Docket No."

and replacing "client system 224" with --client system 200-- at page 21, line 19, overcomes the Examiners objections to the disclosure.

In the office action, the Examiner rejected claims 1-6 under 35 U.S.C. § 103 as being unpatentable over Hamilton, et al (5,737,607, hereinafter "Hamilton") in view of Tang, et al. (5,793,365, hereinafter "Tang"). The Examiner stated that Hamilton discloses an apparatus comprising at least one processor; a memory coupled to the at least one processor; a computer program residing in the memory. The Examiner then stated that Hamilton discloses using CORBA and Java, but does not teach the computer program including an object reference server mechanism. The Examiner then stated that Tang discloses in his system and method providing access to distributed workgroup members, at col. 14, line 29, in particular, an object reference server mechanism delivering an object reference for a naming object to a remote second apparatus upon request of said second apparatus, such as a naming service mentioned at col. 13, line 64. From this, the Examiner concluded that it would have been obvious for one of ordinary skill in the art at the time the invention was made to incorporate the Tang application in which used the object reference server and naming service into the Hamilton system in order to provide the dynamic security communications between servers and clients.

Applicant respectfully disagrees with this conclusion. First, applicants would like to point out that the claimed invention is directed toward bootstrapping a distributed object system. As described in applicants specification, distributed object systems such as that defined by CORBA facilitates interactions between remote objects. These remote interactions between objects can be used to provide a wide variety of services, such as services over the Internet using web browsers. Unfortunately, as described by applicants specification, these distributed object interactions were limited to clients where configuration data had been previously installed. This precluded the use of web browser as

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"zero install" distributed object clients. To overcome this, the claimed invention provides a mechanism and method for delivering a reference to a **naming context object** to the remote apparatus. Again, as described in applicant's specification, naming context objects are objects used to get proxy objects when requested by client objects and thus act as a distributed object oriented directory. See applicant's specification at page 12, lines 9-19. A reference to a naming context object is required for a client objects to find remote objects. Thus, by providing an **object reference server mechanism** delivering an object reference to a **naming context object**, the preferred embodiment allows a zero install distributed object client to be bootstrapped into the distributed object system. For example, in a CORBA based system, a reference to the naming context object can be used to obtain a proxy for the naming context object, and that allows the remote client to then use the naming context object on the server to obtain proxies for other objects on the server. Without the critical step getting a reference to the naming context object to the remote client, distributed object interaction is not possible. This limitation prevents the use of web browsers as zero install remote clients.

Second, applicant submits that the cited references do not disclose these claimed features. Applicant admits that both Hamilton and Tang deal with distributed object interactions, but neither addresses the delivery of an object reference for a naming context object as claimed by applicant. In fact, applicant's searching of these references does not find the term "naming context object" or any likewise functioning object. Furthermore, applicant's reading of these references does not disclose any technique for the bootstrapping of a distributed object system. Instead, they both seem to assume that the required references are previously provided, something that is not possible in a "zero install" remote client. The Examiner seems to admit this in his discussion of claim 7, where he admits that the claimed steps of the bootstrapping method are not found in Hamilton or Teng, but then alleges that they found in van Hoff. See page 4 of Examiner's action.

Thus, applicants submit that amended independent claim 1 is patentably distinct over the cited Hamilton and Tang references. Furthermore, as claims 2-6 depend from, and include all the limitations of claim 1, they are also submitted to be patentably distinct.

Furthermore, with regard to claims 2 and 4, applicant's submit that neither of the cited references disclose the use of a web server as an object reference server mechanism, the object reference server mechanism delivering an object reference for a **naming context object**. As discussed above, applicants submit that neither reference discloses such an object reference server. Thus, while the references do disclose the use of web servers, they do not disclose the use of a web server as the claimed object reference server mechanism.

With regard to claim 5, while Tang discusses the use of stringified object references, it does not discuss the use of one for passing a naming context object reference for bootstrapping, as claimed by the applicants.

In the office action, the Examiner rejected claims 7-36 under 35 U.S.C. § 103 as being unpatentable over Hamilton, in view of Tang and in further view of van Hoff (U.S. Patent No. 5,727,147, hereinafter "van Hoff"). The Examiner admitted that Hamilton-Tang did not disclose:

a method for bootstrapping an object client to a remote object server wherein the object server includes a plurality of objects including at least one naming context, the method comprising the steps of

   a) creating an object reference for said at least one naming context object;

   b) storing said object reference in a object reference server directory;

c) downloading said object reference from said object reference server directory to an object client when said object client attempts to access objects on said remote object server

as claimed by the applicants. The Examiner then stated that Van Hoff discloses in his method using an object oriented program such as a program interpreter to resolve references to remote servers, and the client computer's bootstrap class loader, citing column 2, line 56 of Van Hoff. The Examiner further stated that Van Hoff teaches the bootstrap class loader includes both class references and data references, and cites other portions of Van Hoff to support the contention that claim 7 would have been obvious to one having ordinary skill in the art.

Again, applicant respectfully disagrees. Again, applicants note that the claimed invention, as recited in claim 7, is a method for bootstrapping an object client to a remote object server. To accomplish this, the claimed method recites the downloading of an object reference for a **naming context object**. Again, as discussed above naming context objects are used to get proxy objects when requested by client objects and thus act as a distributed object oriented directory.

In contrast, applicant submits that Van Hoff describes a method for loading class data onto a remote computer. For example, the portion of Van Hoff cited by the Examiner discuses the creation of application specific class loaders being created by a bootstrap class loaders. See column 2, line 56. The cited portion of Van Hoff does not however, describe the downloading of a **naming context object** or anything with equivalent functionality. Nor can applicant find any such discussion throughout Van Hoff. This probably is because Van Hoff is primarily dealing with a standard Java based application, and not a distributed object system where a "zero install" client such as a web browser is used to access remote object

objects using remote object interactions such as those provided by a ORB defined by CORBA (which can be implemented using Java, as described in applicant's specification).

Thus, applicant submits that independent claim 7 is patentably distinct over the cited Van Hoff reference. Furthermore, as claims 8-20 depend from, and include all the limitations of independent claim 7, they are also submitted to patentable over the cited art.

Furthermore, claims 8, 9, and 10 are also submitted to be patentable for those reasons given with respect to claims 4, 5 and 6. With regard to claims 11 and 17, again applicant submits that none of the cited references disclose using a web server to deliver a reference to a naming context object, as claimed by the applicants. With regard to claim 12, applicants admit that uniform resource locators are commonly used to access data from a web server, but again submit that none of the cited art discloses using such a URL for retrieving a naming context object, as claimed by the applicants. Likewise, with claims 13, 14, 15 and 16.

With regard to the remaining claims, applicants submit that they are patentably distinct for the reasons given above with regard to the earlier claims. For example, none of the cited discloses the method recited in claim 19 or the apparatus in claim 28 for bootstrapping using an applet to retrieve the naming context object.
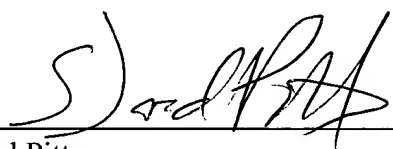
In summary, none of the references cited by the Examiner nor any other known prior art, either alone or in combination, disclose the unique combination of features disclosed in applicant's claims presently on file. For this reason, allowance of all of applicant's claims is respectfully solicited.

Applicants hereby declare that any amendments herein that are not specifically made for the purpose of patentability are made for other purposes, such as clarification, and that no such changes shall be construed as limiting the scope of the claims or the application of the application of the Doctrine of Equivalents.

If any fees are due as a result of this response, please charge IBM Corporation Deposit Account 09-0465. The examiner is invited to telephone the undersigned if this would in any way advance the prosecution of this case.

Respectfully submitted,

By_____

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17 Feb 1999

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